

REMARKS

This is in full and timely response to the above-identified Office Action. The above listing of the claims supersedes any previous listing. Favorable reexamination and reconsideration are respectfully requested in view of the preceding amendments and the following remarks.

Claim Amendments/Status

In this response claims 2-4 have been amended in a manner which is deemed to obviate the objections raised under 37 CFR § 1.75(c) and the rejections under 35 USC § 112. Claims 11-14 have been amended to further clarify the subject matter for which patent protection is sought.

Rejections under 35 USC § 102

The rejection of claims 11, 13-23, 27-28, 32-33, 39-40, 43, 47 and 32 under 35 USC § 102(e) as being anticipated by Cropley et al. is respectfully traversed.

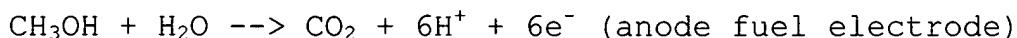
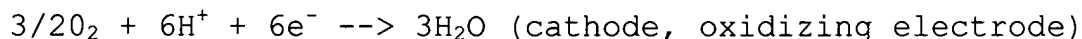
In this rejection Cropley et al. is cited as teaching that the arrangement disclosed in this reference is also capable of producing hydrogen. See column 15 lines 24-35 wherein it is set forth that:

It should also be understood that the fuel cell of the present invention could alternatively be operated so that pure H₂ or a value-added organic product is generated at the cathode, instead of water. This may be done by electrochemically oxidizing the fuel at the anode to form protons, electrons and CO₂ **and then by providing an electrical current to the electrochemical cell to pump the protons through the proton exchange**

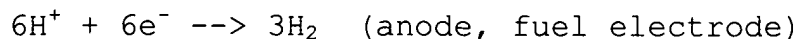
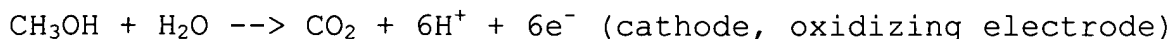
membrane and the electrons through an external circuit to the cathode of the cell, where the **protons are reduced in the absence of oxygen** to form gaseous H_2 or, alternatively, are reacted with a reducible species to produce a hydrogen-containing species. (Emphasis added)

In this response, claim 11 has been amended to call for the generation of hydrogen gas in the absence of a current being supplied to the electrodes of the claimed device. This is seen as distinguishing over the disclosure of Cropley et al.

Further, the Cropley et al. arrangement is such that:



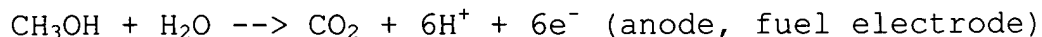
The claimed invention on the other hand is such that:



It is respectfully submitted that Cropley et al. cannot produce hydrogen gas at the anode.

Further, the above cited lines 24 to 35 of column 15 of the Cropley et al. disclose that H_2 gas is also produced in the cathode; however, according to the above-mentioned disclosure, instead of producing H_2O (water) in the above-mentioned equation by externally

supplying (providing an electrical current) e^- without supplying oxygen to the cathode, the H_2 gas is produced, so that the equations thereof will be as follows.



Rejections under 35 USC § 103

The rejection of claim 55 under 35 USC § 103(a) as being unpatentable over Cropley et al. in view of Quang et al. (US 4,840,783) is respectfully traversed.

In paragraph 8 of the Office Action, it is advanced that claim 55 is obvious by modifying the Cropley et al. in view of Quang et al. (US 4,840,783). However, as mentioned above, the Cropley et al. never teaches that the hydrogen is produced in the anode, so that the present invention completely differs from the invention of the Cropley et al. Therefore, even if a carbon dioxide removal device such as disclosed in Quang et al. is a common knowledge of one skilled in the art, still its application the arrangements disclosed in Cropley et al., would not amount to the claimed subject matter.

In connection with the obviousness-type double patenting over Application No. 11/794,357 which is described in paragraph 10 of the Office Action, Applicants submit a terminal disclaimer to obviate this rejection.

Conclusion

It is respectfully submitted that in light of the above amendments and remarks overcome the rejections and place this application in condition for allowance.

Respectfully Submitted,

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